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Parks and
Renewable
Resources

Hon. Colin Maxwell
Minister

Parks Branch

Candle Lake Provincial Park

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CANDLE LAKE PROVINCIAL PARK
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1. SUMMARY

Candle Lake Provincial Park was established in 1986 at Candle Lake by reclassifying three of the four existing areas comprising the Candle Lake Recreation Site (Minowukaw Beach, Sandy Bay and Fisher Creek). The fourth area, Waskateena Beach, retains its Recreation Site status.

The new Provincial Recreation Park has outstanding potential for improved day-use and camping facilities for a large market area in central Saskatchewan. The area has proven to be very popular for both summer and winter visitation. The Park will offer a variety of quality recreational opportunities, particularly with improved services, programming, management and promotion.

This document summarizes previous development, resources, natural recreational features, existing and potential use, and benefits. It also suggests a number of future requirements in order to realize Candle Lake's potential in the Provincial Park system.

2. BACKGROUND

2.1 Previous Plans and Development

Candle Lake Provincial Park presently includes three of the four small public recreation areas scattered along the southern shore of Candle Lake. The smallest (5 acre) site, first established in 1953 at Waskateena Beach, is primarily a beach area and picnic ground where no entry fees are charged and camping is not permitted. Boat launching, docking and limited public development has taken place on this public reserve within the Waskateena Beach cottage subdivision. This small recreation site was not included in the Provincial Park, as were the following.

Minowukaw Beach, the 640 acre site south of the Minowukaw Beach cottage subdivision, was established in 1959 as a campground and day-use area. Boat launching, docking, picnicking, playgrounds and improved beach/bathing facilities have been established. Accessibility to much of the 3000 foot sand beach has been restricted by an interesting series of sand dunes behind the beach. Camping fees are charged at this area.

The third site, the Sandy Bay Campground and day-use area, was developed in 1964 on the south-western side of the lake. This area constitutes the major public access and use area on the west side of the lake. Camping and entry fees are charged for use of facilities. Boat launches, docks, playgrounds, picnicking and campground facilities and services have been developed since 1964.

The small Fisher Creek site was the last of the four to be developed, in 1973. It is a day-use area which has received heaviest use during the prime sport fishing seasons. The area has been used for overflow camping from Sandy Bay. Fees are not charged except when used for overflow camping. There are some interesting historical/archaeological features near Fisher Creek.

Due to the recognition of the high outdoor recreation potential and increasing recreational use and visitation of the Candle Lake area, proposals to establish a Provincial Park were formulated as early as 1974. The last and successful proposal was to incorporate the three largest and most popular recreation sites, Minowukaw Beach, Sandy Bay and Fisher Creek into a new Provincial Recreation Park. As background to the establishment of this Park, a number of other previous plans are worthy of note.

In 1967 the Park Planning Branch of the Saskatchewan Department of Natural Resources recommended guidelines for the recreational development of Candle Lake. This study (Modeland, 1967) produced a general land use zoning plan based on current and anticipated future uses of the shoreline and adjacent backshore areas. These uses included cottage subdivisions, public day-use and camping areas, institutional camps, private commercial facilities and potential forestry operations.

Although a Provincial Park was not yet recommended at that time, concerns were expressed about potential land use conflicts and the need for a better assessment of the resource base for forestry/pulp wood harvesting, access routes and future management responsibilities.

Between 1969 and 1974, one hundred natural areas were identified by the "International Biological Program" (IBP) in Saskatchewan. These areas were selected as areas worthy of preservation within the geographic zones of the province. Among other things, they were to serve as outdoor natural laboratories or museums for education and public enjoyment, provide for research on natural ecosystems, and develop intellectual and aesthetic appreciation of nature.

The original survey (Mould and Reich, 1972) identified the entire area around Candle Lake as an IBP Natural Area (488 sq.km or 188 sq.mi) listing several features of interest. These included floral and faunal diversity, archaeological finds in the sand dune area, outdoor recreation and education and some rare or endangered species (eg. small yellow lady's-slipper). Although identified, to date there has been no official designation for protecting any of the area.

A recent review of the Candle Lake IBP proposal (Adam, 1985) resulted in the recommendation that only the northern portion (252 sq.km or 98 sq.mi) be retained as a Natural Area, possibly within a Provincial Park. It was considered that all deleted areas were now too heavily used for recreation purposes or no longer natural due to access roads, pulp harvesting operations and other commercial enterprises.

By 1974 the Department of Tourism and Renewable Resources Parks and Recreation Branch had undertaken further investigation of the resource base and evaluated the impacts of existing and anticipated future use and demands on these resources. An area of nearly 40 square miles on the north and east sides of the lake, containing nearly sixty percent of the Candle Lake shoreline was recommended for inclusion in a new Provincial Park (Kirby, 1974). Three zones were identified for managment and development purposes: (1) a "primitive zone" of representative undisturbed landscape; (2) a "natural zone" where scenic and other attributes would be preserved but some development, such as access, permitted; and (3) a "recreation zone" set aside exclusively for intensive public recreational development and use. Of the 40 square miles recommended for inclusion in the Park at that time, sixty five percent was in the "primitive" zone, 30 percent in the "natural" zone and only five percent, or less than two square miles, in the "recreation" zone.

Despite previous recommendations to proceed with a large park to protect the resource base for future use, the current park area includes only the Minowukaw, Sandy Bay and Fisher Creek

Recreation Sites in the Candle Lake Provincial Recreation Park. To protect the option of including some additional areas in the future, it is proposed to designate certain additional lands along the lake as Park Land Reserve. Decisions respecting such 'reserved' lands will be made at some time in the future when alternative uses, environmental considerations, future needs and other relevant factors have been thoroughly considered.

2.2 Park Classification and Purpose

Saskatchewan Parks and Renewable Resources presented a White Paper on the Parks Act in 1984. Although a network of 17 Provincial Parks and over three hundred Recreation Sites, Regional Parks and Protected Areas had been established since the 1930's, it was hoped that the existing system of park lands could become better known, appreciated and used.

It was clear that the protection of additional lands through the Provincial Park designation was needed to fully represent the natural and cultural diversity of the province and to provide a greater range of recreational opportunities in all seasons of the year to all residents and visitors.

One of the major provisions of the Parks Act is to identify a classification of Provincial Parks for the purpose of creating a greater public awareness of the primary purpose of individual parks and therefore a more appropriate understanding and use of the area; and a more clear and comprehensive approach to park planning, development and use.

Four classes of Provincial Parks are now identified: Wilderness Parks; Natural Environment Parks; Recreation Parks and Historic Parks. All Provincial Parks are usually large areas of land and water where the high quality of the natural resources combine to make the area provincially significant. The Parks are dedicated to the people of Saskatchewan and visitors for their enjoyment and the cultural, educational and social benefits that may be derived from them for this and future generations. All Parks are established to achieve the dual purpose of recreational use and resource protection, while contributing to the provincial economy.

As a Recreation Park, Candle Lake will be developed and used in a manner distinctly different from the other three classes of Provincial Parks. The criteria used to differentiate this class of park from the others include: primary purpose, objectives, recreational activities, accessibility, visitor facilities and services, commercial activity, resource management strategies.

The primary purpose of the Candle Lake Provincial Park will be to provide high quality recreational opportunities in the region. The focus will be on development of facilities to support a wide range of recreational activities in an attractive natural

setting. Unlike a Recreation Site, which is typically a small area focused on a particular activity or facility like a beach or campground, Candle Lake Provincial Recreation Park will utilize all of its area and variety of resources to encourage the widest possible segment of the public to come to the Park and to experience and enjoy the out-of-doors in both summer and winter.

Candle Lake has been recognized as an important outdoor recreation area for many years. The Provincial Park provides public access to the lake, protects representative natural features of the Wapawekka Uplands, contains interesting features such as the Minowukaw Beach Sand Dunes and provides public facilities and services to complement nearby private commercial resorts, cottage subdivisions and the Candle Lake Resort Village. The designation of this Provincial Park is important to the overall Provincial Park system, especially for the people of Central Saskatchewan.

2.3 Regional Context

2.3.1 Location

Candle Lake is situated in northcentral Saskatchewan in Townships 55, 56 and 57, Ranges 22 and 23, West of the Second Meridian. Its approximate geographic co-ordinates are 53 50 North Latitude and 105 20 West Longitude, as shown in Figure 1.

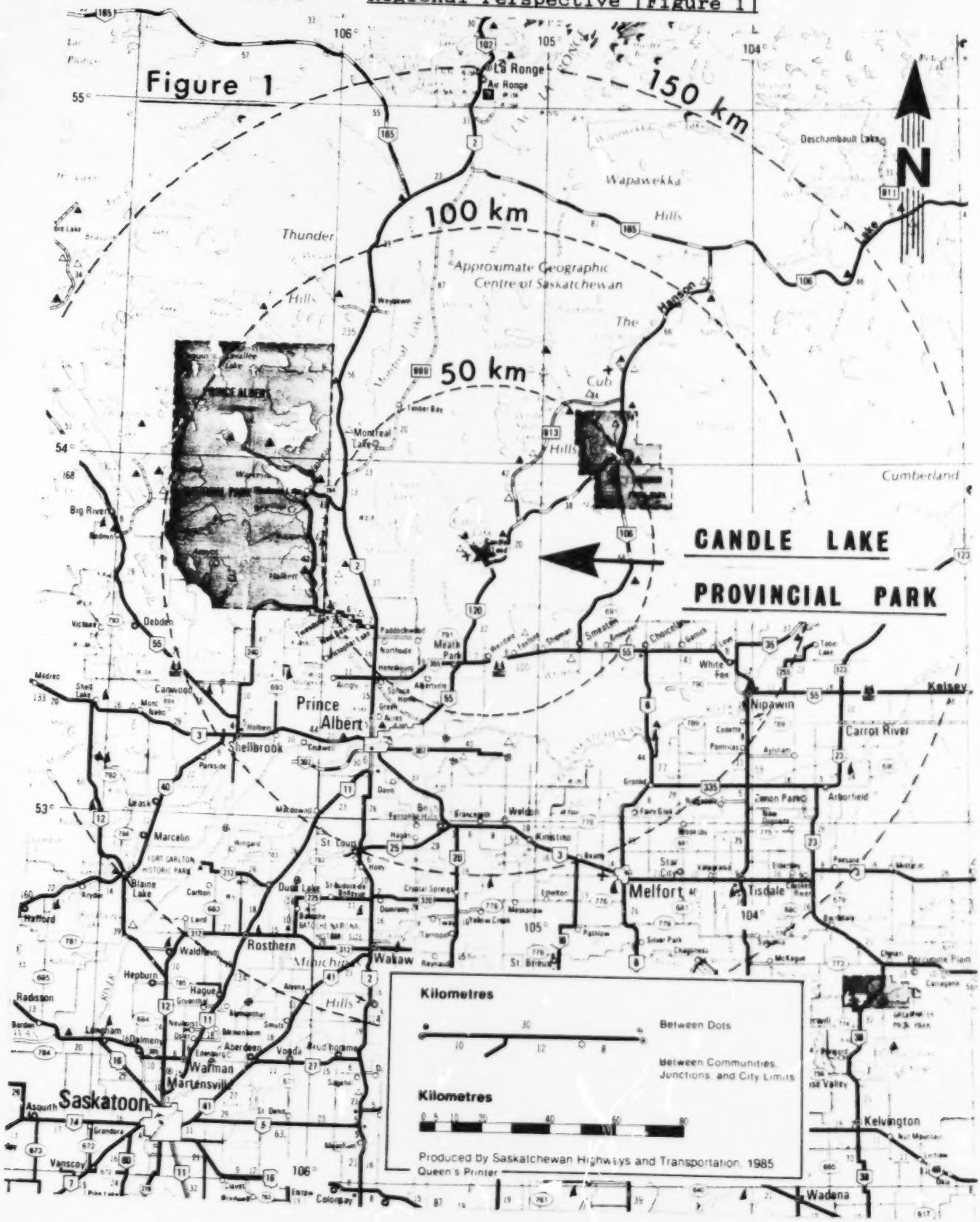
Provincial Highway #120 is the main artery serving the Candle Lake area. There is also an extensive network of forest harvesting roads and trails that provide access to the lake along the west. Some of these roads and trails have been abandoned but others have been improved and remain in use for forestry operations. These roads are used by the public for extensive recreation including hunting and use by motorized recreational vehicles.

The City of Prince Albert (population 31,380 in 1981 census) is located approximately 60 km. southwest of Candle Lake via Highways #'s 55 and 120. Saskatoon (population 154,210 in 1981) is located approximately 200 km. southwest of Candle Lake via Highway 11. Cottagers, weekend visitors, hunters and fishermen from Saskatoon are common. The majority of cottage owners at Candle Lake are from Prince Albert and Saskatoon.

The local permanent residential population is relatively small. The RM of Paddockwood has a population of 1,110 and the Resort Village of Candle Lake, which includes all of the settlement on the south half of the lake, had a population of 219 in 1981. This local population is remaining stable, at best, with small rural declines being offset by increases in the Resort Village and other small urban centers in the region.

A number of other lakes in the area north of Prince Albert have experienced considerable public and private development in the past. These include Emma, Christopher, and Anglin Lakes as

2.3.2 Regional Perspective [Figure 1]

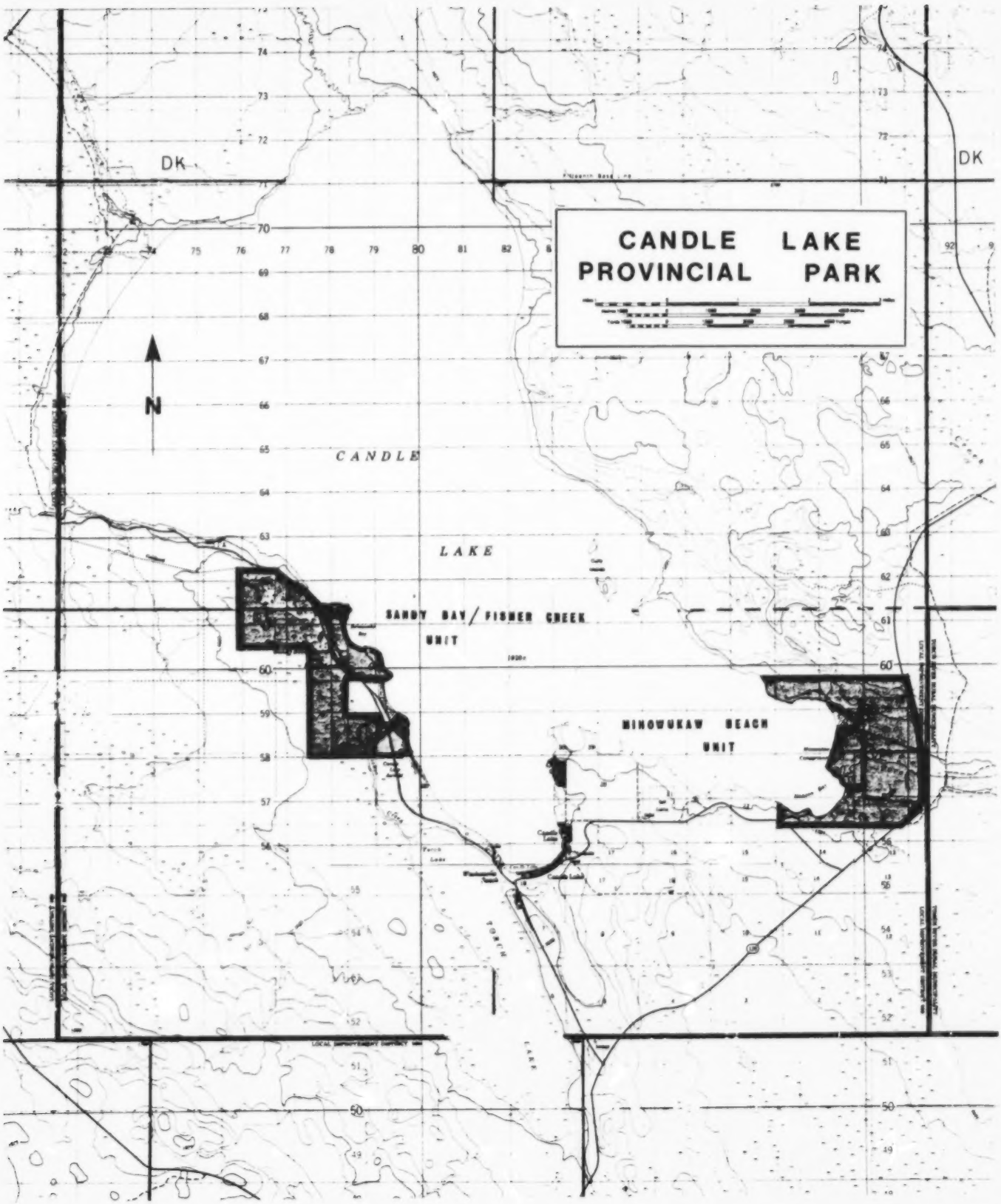


well as Waskesiu Lake in Prince Albert National Park. The great attractiveness of Candle Lake and its natural sand beaches, combined with the inability of the other lakes to absorb further recreational development and use, places Candle Lake in an excellent position to satisfy growing recreational demands.

Public and private facilities at Candle Lake, within the Resort Village and within the new Provincial Park, can serve the recreational needs of other less developed areas to the north and east, including Nipawin Natural Environment Provincial Park and smaller lakes such as Piprell, East Trout and White Swan. The complementary and support role of Candle Lake Provincial Park for tourism and recreation in the region is expected to grow considerably in the future.

2.3.3 Size of Park

The larger recreation areas within the Candle Lake Recreation Site, Minowukaw Beach, and Sandy Bay/Fisher Creek, form the Candle Lake Provincial Recreation Park. The Minowukaw Beach area, forming the eastern block of the Park, is approximately 621 hectares (1,535 acres). The Sandy Bay/Fisher Creek area, forming the western portion of the Park is slightly smaller at approximately 593 hectares (1,465 acres). The total Park area is 1,214 hectares (3,000 acres) as shown in figure 2. In addition, a Park Land Reserve will be established on the northeast side of the lake to protect the environment and resources for possible future expansion options. The Park Land Reserve includes a portion of the natural area identified by the International Biological Program (IBP) in 1972. Decisions respecting expansion of the Provincial Park to encompass these Park Reserve Lands will be made at some future date following further investigations and public input.


CANDLE LAKE
PROVINCIAL PARK
N
CANDLE
LAKE
SANDY BAY / FISHER CREEK
UNIT
MINOWUKAW BEACH
UNIT
DK
DK

3. RESOURCE INFORMATION

3.1 Historical Review

Even while virtually inaccessible and remote in the early 1900's, a number of cabins were established at Candle Lake. Recreational use of the area increased in the 1930's resulting in a number of cottages and residences being established. By 1947 the first subdivision was registered (Waskateena Beach) and small public use areas were established on the designated "public reserve" along the shoreline. A second registered subdivision was opened in 1959 at Minowukaw Beach, eight miles northeast of Waskateena Beach. These and other private subdivisions have grown as larger population centers further south became more accessible due to continued highway improvements.

Although access from larger centers such as Saskatoon and Prince Albert was neither direct nor paved in the 1950's or 60's, the area began to receive increased visitation for camping, fishing and other day-use activities.

The 1970's saw continued private development and ever increasing use of the public recreation sites at Candle Lake. Improved accessibility created by the upgrading and surfacing of Highway 120, restrictions on further development of other competing lakes (Emma, Christopher, Anglin, Waskesiu) and a greater public awareness of the high quality recreational resources of Candle Lake combined to bring about development pressures.

Rapid growth in cottage development, commercial facilities and services, and overall recreation use of the lake occurred in the 1970's following electrification of the area. The Resort Village of Candle Lake was incorporated in 1977 in the Rural Municipality of Paddockwood #520, and subsequent annexations of surrounding lands included nearly all commercial, cottage, residential and recreational development in the southern two-thirds of the lake.

Recreation use of the Candle Lake area has continued to increase in all seasons. Fishing in late winter and spring, winter snowmobiling and cross-country skiing, camping, boating, fishing and day-use in summer, hunting in the fall and year-round use of cottages and private commercial resorts has become common. Statistics indicate that the Candle Lake Provincial Park now receives the 6th highest level of visitation and the 7th highest camping use of all parklands in the Province.

3.2 Natural Features

The Candle Lake Provincial Park and the Park Land Reserve on the northeast side of Candle Lake are located in and representative of the Wapawekka Uplands Natural Region of Saskatchewan. This area is very attractive for outdoor recreation

activities due to a number of related natural features. The large lake with its exceptional sand beaches, the topography and natural vegetation, climate, aquatic and wildlife resources, all combine to create outstanding recreational opportunities. A number of natural features of the area, both within and outside the Provincial Park, are described below

3.2.1 Geology

The surface deposits of the Candle Lake area are of Pleistocene or Recent geologic age. Pleistocene deposits are most common and include the products of glaciation and related lacustrine and fluvial processes. The glacial deposits in the Candle Lake region vary from 300 to 600 feet (90 to 180 m.) in thickness above the Cretaceous bedrock surface. These deposits are referred to as glacial till, glaciolacustrine or lacustrine, and glaciofluvial or outwash materials. Materials deposited since the end of the glacial period are referred to as Recent deposits. The organic material or peat deposits that have accumulated under poor drainage conditions in depressional areas are also Recent.

3.2.2 Physiography

Candle Lake and the area around it, is located in the Whiteswan Uplands subsection of the Wapawekka Hills Upland Section of the Saskatchewan Plains Physiographic Region. The Wapawekka Hills Upland is a rolling Morainic till plain with elevations ranging from 1,600 to 1,950 feet (480 to 590 meters) above sea level.

The terrain around Candle Lake shows slight general relief; a rolling topography with light undulations around the lake. The western side of the lake is predominantly level to depressional with extensive muskeg areas. The eastern shoreland is higher and more steeply sloping, rising up to a maximum 180 feet (55 m.) above the lake level (1,620 feet above sea level).

Drainage around the lake is generally not well developed and considerable runoff is held in large muskegs and low-lying areas. There are eight significant drainage inlets into Candle Lake, the largest being Hanin, Clearsand, Birchbark and Fisher Creeks and the Whitefish River at the north end. The lake is part of the headwaters of the Torch River drainage basin, which empties into the Saskatchewan River system to the east.

Candle Lake is the fourth largest lake in southern Saskatchewan, after Lake Diefenbaker, Tobin Lake and Last Mountain Lake. With a total surface area of approximately 50 square miles or 32,000 acres (12,950 ha.) and a total shoreline length of approximately 44.2 miles (71 km.), it would be considered relatively large compared to most lakes in the settled part of the province.

Candle Lake's water quality is rated relatively high due to its usual clarity and lack of algae. Because it is fed by several springs and its larger size, the lake's water temperature is generally lower than that of smaller lakes in the area. Its surface temperature in midsummer averages 18.5 C (65 F).

Spring runoff causes fluctuations in lake levels. Because Candle Lake is fed by many springs and streams, and has only the Torch River as a major outlet at its southeast corner, the lake's level is usually raised during wet seasons. (The water table around the lake is also raised at such times.) This has resulted in occasional flooding problems, most recently in the early 1970's, when high spring runoffs were followed by unusually high spring and summer precipitation. There is a control structure (dam) on the Torch River to restrict flow from the Lake during dry periods to help maintain lake levels. The long term lake level has generally been stable.

The lake is moderately shallow with a maximum depth of 55 feet (16.8 meters) and a mean depth of 26.6 feet (8.1 m.). Slightly under half the shoreline is sand with the remainder being largely of small to large boulders underlain by sand. The Lake is characterized by several shallow beach areas and medium offshore depths. Ten major natural sandy beaches, from 300 m. to nearly 2,000 m. in length, are present. Most of these beaches have very high outdoor recreation potential. Three beaches are rated Class I by the Canada Land Inventory, and very little of the entire Candle Lake shoreland is rated lower than Class 3. Two of the best beaches, at Minowukaw and Sandy Bay are within the Provincial Park; the third, and best on the entire shore of Candle Lake is within the Park Land Reserve on the north east side of the Lake.

3.2.3 Climate

The climate of the Candle Lake area is described as semi-arid to sub-humid and is characterized by relatively short cool summers and long, cold winters. The growing season normally extends from the end of April to the end of September, giving an average of 90 to 100 frost-free days. As few as 70 frost free days can occur in the surrounding Wapawekka Uplands.

July is usually the warmest month, with a mean monthly temperature of 18.6 C. June and August are slightly cooler, averaging 15.4 C and 17.2 C respectively. Mean monthly temperatures from December through February are all below -15 C with January being the coldest month. The average first occurrence of ice in the Prince Albert area is November 6, and of freeze-over, November 15. Spring breakup occurs between April 10 and May 6.

Average annual precipitation is moderately low (less than 40 cm.) with approximately 30% falling as snow. In winter, December averages 20 days of no recorded sunshine. In summer, the longer days and lack of precipitation combine to give much sunshine. While the majority of precipitation occurs during the growing season, the months of June, July and August record the greatest numbers of sunshine hours. Total sunshine hours average over 2100 annually.

Moderate winds are prevalent from the north and northwest but because of the forest cover their effects are less noticeable than in more exposed parts of southern Saskatchewan. With a Northwest fetch of 15 miles (24 km.), waves of 1.5 meters (5 feet) on Candle Lake are not uncommon, especially in late spring. Generally, winds are much less regular and weaker in summer than in winter.

3.2.4 Soils

The major surficial deposit in the Candle Lake area is glacial till on which deep, medium to coarse textured Gray Wooded (Luvisolic) soils have developed. They are typical forest soils, being moderately leached, lower in organic matter and poorer in structure than grassland soils.

The moderately rolling to hilly landscape is characterized by relatively steep slopes with numerous undrained depressional and lowland areas containing Gleysolic and Organic soils. Frequent deep peat muskegs occur in local depressions, lower flats and creek and river valleys. Fen and Peat Bog organic soils have very high water tables, at or near the surface most of the time.

The Gray Wooded soils are not rated highly for agriculture since they have soil moisture excesses or deficiencies and are low in fertility as a result of extreme leaching from

excess water. Jack pine, black spruce and white spruce are common tree species of the Bittern Lake soil association. White Spruce is the most common species on the Waitville Association. They have low soil fertility due to lack of organic content and nutrients and in the poorly drained areas they are excessively wet. The Pine Association, is comprised of rapidly to imperfectly drained soils. Although Jack pine is most common, white spruce and aspen are found there as well. They are susceptible to wind and water erosion when vegetation has been damaged or removed.

On Bittern Lake soils, limitations for recreational use are moderate due to its soil texture. Day-use activities, camping, trails, playgrounds, and support facilities can be developed on this type of soil without much damage to the soil. Limitations can be overcome with special planning, controlled use, proper construction practices and continued maintenance.

All soils with excessive wetness are difficult and costly to use for any recreational activity.

The Pine soils association has severe limitations for intensive playground, campground and day-use/picnic ground development due to their low water storage capacity and susceptibility to erosion.

3.2.5 Vegetation

Candle Lake is located on the southern edge of the Mixedwood Ecodistrict of the Southern Boreal EcoRegion. Natural vegetation around the lake reflects the transition between mixed-wood forest and northern coniferous forest. Vegetation on the upland soils include trembling aspen, white spruce, jack pine, white birch, balsam fir with alder, hazelnut and willows. Dominant communities characteristic of soil type and drainage conditions include jack pine, white spruce--aspen poplar and black spruce-larch.

Vegetation in muskegs and poorly drained soils include black spruce, tamarack, balsam poplar, white spruce, water (swamp) birch with labrador tea, sedges and sphagnum moss.

Black spruce is most common in the bog and fen soil areas between the Clearsand and Hanin Creeks. Large muskeg areas are found along the Whitefish River, while white spruce, jack pine and trembling aspen, interspersed with poorly drained muskeg areas, occur on the gray wooded soils of the Bittern Lake soil association. These soils predominate on the east side of Candle Lake except in the area of the point opposite the Curly Islands and south of Minowukaw Beach.

3.2.6 Aquatic

Although sixteen species of fish are found in Candle Lake, including Lake Sturgeon, Lake Chub, Cisco and Trout-perch, the dominant sport fish species are Northern Pike and Walleye. Other significant larger species include Lake Whitefish, Tullabee and White Suckers. The most numerous of the smaller species are Yellow Perch, White Sucker fingerlings, Emerald and Spottail Shiners. Candle Lake has supported both commercial and sport fisheries in the past, both contributing positively to the local economy. (There are presently ten licenced commercial fishing operators and four bait fish fisherman. The commercial fishing limit is 27,200 kg at the present time.)

There is a high proportion of sandy organic bottom materials in Candle Lake resulting in a poor growth of plankton. This lack of plankton in turn results in a poor crop of bottom fauna, the food source of larger fish species. This natural condition limits the production of fish in Candle Lake to levels lower than might otherwise be expected for a lake of its size.

While significant fish spawning and habitat areas are located at various sites around the entire lakeshore, Torch Lake and Fisher Creek are the most important in the entire area. Torch Lake is the major spawning ground for fish in Candle Lake, especially Walleye. In spring the adult fish travel up Fisher Creek into Torch Lake to spawn. In late winter and early spring sport fishing has been an important recreation activity. On weekends in March and April in the 1970's hundreds of anglers were observed on the ice at the mouth of Fisher Creek where it empties into Candle Lake. Many of these anglers took their limit of adult Walleye which were on their way to Torch Lake to spawn.

Fisheries personnel believed that overfishing was mainly responsible for reduced fish populations in the 1970's. Restrictions on fishing activities in the Fisher Creek area has increased fish populations in recent years. Because of the popularity of sport fishing, fish populations are likely to continue to receive intense pressures in the future. Continued restrictions on fishing on Fisher Creek, and other fishery resource management strategies are likely to continue to ensure adequate sport fish populations in the future. Spring streams which empty into Candle Lake and the north shore have traditionally been other good fishing areas.

Pressure on the commercial fishery caused a decline in the whitefish populations as well. This resource will also be subject to continued management in the future.

Fisheries personnel will be stocking an artificial pond in the Sandy Bay area of the Park with Rainbow Trout. The pond was created from an earth "borrow pit" when road improvements were made on the west side of the Lake.

3.2.7 Wildlife

Wildlife in the area is characterized by an abundant and diverse bird population because of the numerous productive nesting and breeding sites around the lake. Migratory birds are also prevalent during the spring and fall migration periods. Spruce and ruffed grouse are common. Eagles, osprey and colonial nesting birds are also frequent visitors.

Moose, white-tailed and mule deer, black bear, woodland caribou and elk are found in the area as well as a variety of smaller mammals including red fox, coyote, gray wolf, snowshoe hare, red squirrel and smaller rodents.

The diversity of vegetative cover in the Candle Lake area provides good habitat for ungulates and other wildlife. Forestry operations, winter snowmobile activity and increasing use of forest access roads by hunters are having negative impact on local wildlife populations. Improved wildlife management strategies may have to be implemented to retain the present level of recreational benefits derived from this renewable resource base.

3.3 Recreational Features

The Canada Land Inventory indicated that Candle Lake has a very high recreation capability with ten major natural sand beach areas varying in length from 300 to 2000 meters. These beaches, other sandy shorelines and the clarity of the lake attract visitors for a wide variety of acquatic activities in summer.

The fisheries resources have attracted anglers from great distances, particularly in the late winter and early spring. Good habitat for ungulates (elk, moose, woodland caribou, white tailed and mule deer), waterfowl and other wildlife species has made the area attractive for hunting in autumn as well as wildlife viewing in all seasons.

The lake and surrounding area possess a very high potential for additional outdoor recreation development and use due to these superb natural sand beaches, the large lake surface, the scenic mixed wood forests and a combination of wildlife and fisheries resources capable of attracting visitors from the central portion of the province. These features warrant the planned development and protective resource management associated with Provincial Park status.

3.3.1 Units of the Park

Candle Lake Provincial Park has two separate units: Minowukaw Beach on the southeast end of the lake, and Sandy Bay/Fisher Creek on the southwest side. Both areas are accessible and partially developed for day-use activities, camping and public access to the lake.

The Minowukaw Beach unit is slightly larger of the two with over 6 km. of shoreline north and south of the Torch River outlet. This area contains some of the best bathing beaches on the lake as well as characteristic vegetation communities. The former Minowukaw Beach Recreation site is the focus of this unit with its two natural sand beaches and sensitive sand dune bachshore areas. Higher, better drained forested areas in sections 26 and 27 to the north of the Minowukaw subdivision will be useful for more extensive recreational activities. The Minowukaw Beach subdivision is surrounded by this eastern unit of the Park. Highway 120 forms the eastern boundary of this unit.

The Sandy Bay/Fisher Creek unit on the west side of the lake, similarly has the two former recreation sites within its core. Approximately 3.8 km of lakeshore are within this unit with a quarter of it being first class Sandy Beach. The Sandy Bay Beach is more sheltered from the prevailing northwest winds than the Minowukaw Beach in the eastern unit of the Park. While the backshore immediately behind this beach is unsuitable for recreational activities due to its high water table and poor drainage, attractive forested areas are located nearby, immediately to the north and to the south. The existing campgrounds and day-use facilities are located in the more northerly forested section between the main access road and the shore. The southern forested portion remains undeveloped at this time. The Fisher Creek recreation site was joined to the Sandy Bay area by including approximately 1200 acres of Crown land west of the two areas. This additional land was required to connect the small, but important Fisher Creek area to the Sandy Bay area which had been separated by approximately 190 acres of private land.

While much of the crown land added to the Park west of the newly reconstructed main access road is of limited direct value for outdoor recreation activities, it is representative of much of the poorly drained natural landscape on the west side of Candle Lake. It includes the borrow pit which fisheries personnel intend to stock with rainbow trout.

The Fisher Creek area is an important element of the west unit of the Park. It has received heavy use in the past, by anglers, and serves as a small day-use area and overflow campground from the Sandy Bay campground one and a half miles further north. In addition, the Fisher Creek area contains some interesting historical/archaeological features worthy of interpretation within the Park.

In 1887-88, a winter outpost of the Hudson Bay Company Post at Fort a-la-Corne was established near the confluence of Fisher Creek and Candle Lake. The location of this temporary outpost, within the Fisher Creek portion of the Park, has been determined by examination of depression pits and two high earth foundation remnants (Helfrick, 1975). In addition, test evidence indicates long time habitation and use of the Fisher Creek area.

Preliminary surveys in 1975 resulted in the collection of a number of materials including projectile points scraping tools, cutting tools, flakes and bone. On private land immediately north of Fisher Creek as many as 19 aboriginal burials have been reported. The area was reportedly fenced in the 1930's to protect the mounds from vandalism. Additional research and interpretation is warranted in this part of the Park.

The Minowukaw Beach and Sandy Bay/Fisher Creek units of the Provincial Park are shown in Figure 2.

3.4 Recreational Use

3.4.1 Existing Use

The Candle Lake area is very popular for a wide variety of outdoor recreation activities including cottaging, camping, boating, bathing, picnicking and other day-use activities in the summer season. Other popular activities include cross-country skiing and snowmobiling in winter, angling in the spring and hunting in the fall.

The area receives extensive use from numerous cottage owners along the lake and has the 6th highest visitation of all parklands in the park system. Between 1974 and 1978 visitation to the Candle Lake recreation sites increased by 131 percent (compared to 22% for all provincial sites), and campground use increased by 135 percent during the same period. The rate of growth in use of these facilities has slowed considerably since then but Candle Lake now enjoys a solid base of cottage owner and visitor demands upon which to develop further.

Tables 1, 2 and 3 below summarize the number of vehicles entering, entry permits issued and camper-days at the Candle Lake Recreation Site in selected years between 1976 and 1985.

Table 1 Number of Vehicles Entering Candle Lake Recreation Site (1976 - 1985)

Year	1976	1979	1981	1983	1984	1985*
Vehicles Entering Sandy Bay Minowukaw	26,120	34,048	50,699	46,661	72,408	64,000

*estimated

Table 2 Number of Entry Permits Issued at Sandy Bay (1980 - 1985)

Year	1980	1981	1982	1983	1984	1985
Permits	3,282	3,645	3,836	3,742	3,904	3,459

Table 3 Camper-Day Comparisons (1980 - 1984)

Year	1980	1981	1982	1983	1984	1985
Camper Days	43,269	50,535	54,904	37,094	50,101	43,360

Campground occupancy at Candle Lake is highest in July and August, usually exceeding the 213 designated site capacity on holiday weekends. Overflow camping from the Sandy Bay Campground is directed to the Fisher Creek picnic ground at such times.

The number of vehicles entering the area has varied significantly over the last five year period, however camping statistics and permit sales indicate a stable to gradual increase in summer use of the area.

The Candle Lake area is characterized by significant growth in both the supply of, and demand for winter sports and recreation facilities and activities. Candle Lake is now an established winter sports area as evidenced by the fact that three private accommodation centres are now open year-round. These centers serve hunters, cross-country skiers, ice fishermen, and snow mobilers in the region but their main use continues to be in the summer.

There are also trends toward increasing use of private cottages in the area. At present there are 731 existing cottages on private land and 215 on provincial crown land around the lake. A 1983 study revealed that 34 percent of cottage owners originated from Prince Albert, 29 percent from Saskatoon and 27 percent were from elsewhere, mainly in the province. Ten percent of these cottages could be considered permanent residences.

3.4.1.1 Available Facilities

Facilities at the four former recreation areas were developed over the past two decades with the majority of improvements located at Minowukaw Beach and Sandy Bay, the two larger sites.

The small Fisher Creek area was a small day-use area with undefined parking for approximately 50 vehicles! Twelve picnic tables, a shallow well for water, garbage cans and vault toilets are provided as well as fish cleaning tables.

The 5 acre Waskateena Beach Recreation Site (which remains outside the Provincial Park) serves as a picnic ground behind the beach. Twenty-six picnic tables, 2 picnic shelters, garbage cans, barbecue stands, undefined parking for 50 vehicles, small playground, a water well, and a fish cleaning shelter are provided. A 1700 foot beach is buoyed for swimming and an unserviced change house is provided. A boat launch and public dock is also provided. Camping is not permitted. These limited facilities are used by adjacent cottage owners as well as day-use visitors. The area becomes congested at times of heavy visitation.

The Minowukaw Beach site serves as both a day-use and camping area. There is 2500 feet of beach with a buoyed swimming area and an unserviced changehouse. Toilets, water supply (well), boat launch and docks are provided. Fish cleaning tables and shelters are available for anglers. A picnic shelter, small playground and limited parking are available to day-users. The camping area consists of 76 non-electrified sites and an overflow area (20 sites). A waste disposal site for

recreational vehicles and trailers is provided. For collection of fees, maintenance and management of the site an entry kiosk and a maintenance storage building have been constructed. Areas for group camping, as well as trails for snowmobiling and cross-country skiing are located nearby.

The Sandy Bay area has facilities similar to Minowukaw Beach as it too is a combined campground/day-use area. The level of services is somewhat higher with 8 flush toilets, a campground service center, laundry, street lighting and 76 electrified camp sites. There are 61 non-electrified campsites and 20 overflow sites. The usual day-use facilities include picnic benches, picnic tables, barbecue stands, gargage cans, water supply and buoyed swimming area and playground. A boat launch, docks and fish cleaning shelter are available for anglers and boaters.

In general, considering the attractiveness and heavy use of the area, the level of service provided at all four sites at Candle Lake is relatively low. The existing facilities have received heavy use over the past number of years and upgrading of facilities, services and programs is warranted.

3.4.1.2 Recreation Use and Trends

The total population at Candle Lake at peak periods is estimated to be in excess of 5,000 persons. Considering the size of the lake and the availability of large underutilized beaches, the resource is capable of satisfying additional recreation demands. Summer use is currently limited more by lack of access, parking, public services and facilities than by the resource base itself.

While summer use of the developed recreation areas at Candle Lake remains high, growth in use and visitation could not be sustained at the level of the 1970's without major improvements to the facilities and services.

Demands for all types of outdoor recreation are expected to increase in the future. While winter recreation will continue to grow in popularity, the summer season will continue to be the dominant period of use. Development of the Provincial Recreation Park can be aimed towards meeting many of those public demands.

Opportunities for expanded sport fishing and hunting in the Candle Lake area are restricted by the available resources. Reduced big-game populations have caused reduced hunting activity in the immediate area. Hunting activity however remains relatively strong to the east of Candle Lake. (A Game Preserve is in effect north of Candle Lake.)

Despite recent improvements in rejuvenating the depleted fish populations, the fishery resource can accommodate only a limited amount of additional sport fishing activity. Careful management of these resources will be necessary in the future. The borrow pit along the

main access road west of Sandy Bay is being stocked with Rainbow Trout under the Fishery Enhancement Fund to diversify angling opportunities.

3.4.1.3 Resource Use and Trends

The natural resources around Candle Lake are in demand for a variety of public and private uses. Some concerns and potential conflicts have been identified relating to the future use and protection of these resources. As renewable resources, the lake, the forests, the fish and wildlife all require controlled use and careful management in order to sustain them. At the present time, resource uses in the area include commercial fishing, angling, hunting, trapping, forest harvesting and gravel extraction.

Additional use of the Candle Lake area for outdoor recreation requires an evaluation of the carrying capacity of the lake for boating, the lakeshore for cottages, private commercial resorts and public access, the fishery and wildlife resources, and competition from other activities such as commercial forest operations. Sensitive environments must also be dealt with when considering the appropriateness and levels of recreation use.

The carrying capacity of Candle Lake has been calculated by recreation planners and resource managers to estimate its acceptable levels of use. "Carrying capacity" refers to the character of use that can be supported over a specified time by an area developed at a certain level without causing excessive damage to the physical environment or the experience of the visitor. At Candle Lake the overall capacity of the lake and shoreline is related to factors such as angling, boating, cottage development and related activities such as boat docking. Development of backshore lands for cottages, camping or private commercial resorts add to the demands placed upon the lakeshore and the lake itself.

The capacity of Candle Lake for boating has been estimated at 2,047 boats based on an average density of ten acres per boat. At this density there is a significant unused capacity for boating as existing development on Candle Lake indicates boat use at approximately one quarter of the calculated carrying capacity.

The shoreland capability is a measurement of the natural landscape around the lake to attract and sustain development and use. The landscape must be able to satisfy the physical requirements of development as well as withstand the stresses associated with sustained use. The major existing shoreland use and potential use is for cottage subdivisions. The majority of the most desirable shoreland for cottages has already been developed by private entrepreneurs, particularly on the south and west sides of the lake.

An earlier Parks Study (Kirby, 1977), determined that within the Candle Lake Resort Village, there was a capacity for more than 2,000 additional cottages. Most of these potential cottage sites however would not be found close to the lakeshore. Access to the lake for boat docking and bathing were considered to be significant limitations for this type of use.

When backshore recreation development shares a common lake frontage, the potential quality of recreation development can be limited by the capacity of the shoreline to support water oriented activities (boat docking, bathing areas, access and parking). At Candle Lake the majority of existing cottage development is located in backshore subdivisions. Boat docking and lifts occur wherever site and ownership conditions permit, all along the length of the developed shoreline. The visual quality of the lake is reduced by this form of development and further proliferation of this form of shoreline use will continue to depreciate the recreational resources.

Some public shorelines, such as Waskateena Beach, receive very high levels of public use during peak periods. Crowded conditions can lead to conflicts between day-users and adjacent private cottage owners. Trends towards increasing public use of the lake suggests a need for improved public recreation facilities at alternative beaches where the resource base can better support additional use.

At Candle Lake ten natural sand beaches have been identified as having adequate capability for public recreational use (based on attractive wet beach, dry beach and backshore conditions). Candle Lake's dry beaches are generally narrow (less than 20 feet) and the wet beaches are gently sloping. Backshore areas tend to have limited suitability for support activities due to topography, poor drainage, limited access, private ownership or other uses.

Two of the longest and widest beaches capable of supporting greater public use are located at Sandy Bay and Minowukaw. These were two Recreation Areas which were selected for upgrading to Provincial Recreation Park status. Unlike Waskateena Beach which becomes crowded at periods of peak use, the Sandy Bay and Minowukaw Beach areas have underutilized capacity. The longest Class I beach with the best potential for future public use and development remains within the Park Land Reserve on the northeast side of Candle Lake. (Sections 30 and 31, Township 56, Range 22, W 2nd M).

Angling capacity is based on the assumption that a lake can only produce a certain amount of fish each year. Excess harvests through either sport fishing or commercial fisheries will deplete the fish population below its optimum capacity. Information on the current Candle Lake sport fishing harvest is

insufficient to enable calculation of angling capacity, however a number of relevant observations can be made about this resource.

Candle Lake is less productive than might be expected for a lake of its size due to large percentages of relatively unproductive lake bottom. Current fisheries management is limited to season closings and winter closing of the Fisher Creek area. A 1981 study determined that walleye populations have increased since 1976 and the pike population has remained stable. Angling success for walleye has increased significantly throughout the year since Fisher Creek was closed to anglers.

Angling is very popular in spring but is largely an adjunct to other recreation activities in summer. Additional development of Candle lake for day-use and camping should not have a negative impact on the sport fishery.

A number of topographic, biological and cultural features are sensitive to certain uses of excessive recreational use. These features should be protected through proper planning and resource management and development quidelines. Sensitive areas such as the Minowukaw Sand Dunes should be protected from further damage by human activity and rehabilitation of already damaged areas should form part of the management strategy.

Forestry operations are important in the Candle Lake area. The Provincial Forestry Branch have timber management and silva culture sample plots throughout the area. (One of these plots is within the Fisher Creek portion of the Park.) There is other ongoing forest research by Canadian Forestry Service and Saskatchewan Parks and Renewable Resources. (The Canadian Forestry Service has a field station located at Candle Lake

The Candle Lake area is within the Prince Albert Pulp Company (PAPCO) Licence area. It is considered important to PAPCO's operations due to its proximity and accessibility to the pulp mill in Prince Albert. Much of the area to the west of Candle Lake has already been cut over and forest operations are still present. Private local cutting operations are continuing for posts, lumber and fuel wood. These forestry operations are of concern due to their potential negative impacts on the Candle Lake recreation resources. The eastern and northern areas which were identified and reconfirmed as desirable natural areas under the IBP investigations are of particular concern in the future when forestry interests shift to the east side of the lake. Designation of a Park Land Reserve on the north east side of Candle Lake will enable optimum resource use evaluation and management guidelines.

Saskatchewan Parks and Renewable Resources prepared a 'Shoreland Management Statement' for Candle Lake in early 1985. This statement identified a number of different Management Units which recognized inherent differences in the landscape's ability to support use, development of the resource base and intensity of use.

The Sandy Bay Area was identified as having a high capability for intensive recreation use featuring public lake access, day-use activities and public camping. Non-motorized trails would be a suitable form of development.

The Minowukaw Area was also identified as having a high capability for intensive recreational use but sensitive areas such as the dunes required special management practices.

Inclusion of these areas within the Candle Lake Provincial Park is expected to assist greatly in the management and protection of their resources.

3.4.2 Potential Benefits and Use

3.4.2.1 Resource Protection and Interpretation

Development of the Candle Lake Provincial Recreation Park would ensure that suitable representative portions of the Candle Lake natural environment, particularly its shoreline features, would be protected for future public use and enjoyment. Some areas such as the Minowukaw Sand Dunes are very sensitive to misuse or overuse, while other areas such as the bogs are protected by their inherent inability to attract or support intensive recreational activities. Interpretive and extensive forms of recreation can be pursued within the Park and outside the core areas which will be developed for day-use and camping.

Proper, planned placement, development and maintenance of support facilities would protect the natural resource base and guard against misuse of the more sensitive areas.

Interpretation of the Candle Lake environment, including the native flora and fauna as well as geologic, historic and cultural features within the Park and elsewhere in the Candle Lake region, would add to the visitors' appreciation and understanding of the Park. While the high quality sand beaches, aesthetics and shelter of the forest, wildlife and fish will continue to attract visitors to the area, interpretive facilities, developed trails and markers and public communication of resource management strategies will add significantly to the quality of their experience.

Designation of a portion of the IBP area on the northeast side of the lake as Park Land Reserve will ensure future options for protection of this natural area. The diversity of flora and fauna, some rare or endangered flora, outdoor education and extensive recreation potential suggest inclusion of this area in the Park in the future.

3.4.2.2 Outdoor Recreation Benefits

The two units of Candle Lake Provincial Park, although limited in size and development, are consistently among the most popular in the province. Camping and day-use activities have been

extremely popular due to the attractiveness of the lake, the extensive high quality beaches, forests, wildlife and fish. Overflow conditions have been common in the past decade.

Establishment of a Provincial Park on Candle Lake will serve to further increase the area's ability to attract visitors, particularly when accompanied by a higher level of programming, services and recreation facilities. The upgrading and expansion of the Minowukaw Beach and Sandy Bay/Fisher Creek areas should relieve congestion at the smaller Waskateena Beach Recreation Site benefiting that area as well.

Increasing awareness and appreciation of the Candle Lake resources will lead to increasing public pressures in the future. The inability of other lakes in the region (Emma, Christopher, Anglin, Waskesiu) to absorb further increases in use will add to the outdoor recreation pressures at Candle Lake. The creation of the Provincial Park should benefit the entire population of central Saskatchewan. Setting aside a significant portion of the lake for preservation of the areas' natural attributes and ensuring orderly growth and development will be two primary benefits.

Much of the land within the Park can be used to provide opportunities for nature study, hiking, scenic appreciation, cross country skiing, camping and picnicking. Accessibility to Candle Lake will be ensured to the public for all forms of acquatic activities (boating, water skiing, sport fishing, sailing). The potential of the high quality sand beaches for bathing and swimming can be realized through proper development of support facilities. Day-use in the summer season will continue to be the most attractive use and benefit of the Park.

3.4.2.3 Tourism Benefits

The Park should become an important site for tourists who are passing through the Prince Albert region, either on their way north towards the Prince Albert National Park, the Lac La Ronge Provincial Park or the Churchill River, or northeast towards the Hanson Lake Road, Nipawin Provincial Park or other areas. The variety of summer and winter recreational activities possible within the Park as well as overnight camping, hunting and fishing in the shoulder seasons, and the availability of year-round private commercial resorts nearby could combine to make the Candle Lake Region a natural place for tourists to visit for a short or extended period of time.

Although the Park will not necessarily be considered a major tourist destination area, the improvements and promotion associated with its Provincial Park status will benefit the economy of the entire Candle Lake region. Private commercial operators and nearby communities will benefit from the expected increase in tourism.

4. FUTURE REQUIREMENTS

Candle Lake Provincial Park will require a number of improvements to satisfy expected increases in recreation demands and to protect the natural environment.

An immediate review and update of all previous development plans will be required to ensure that goals and objectives associated with the new Provincial "Recreation" Park classification are satisfied.

A park management strategy will also be a requirement as none currently exists for the area. Communications, promotion and signing will also have to be addressed, both within the Park and throughout the immediate market area.

Traditional use of the Minowukaw Beach and Sandy Bay/Fisher Creek areas and expected demands suggest the following:

1) increased campground development including more electrified sites and an improved level of services (flush toilets, service centers);

2) improved support facilities in the day-use beach areas, (change facilities, flush toilets);

3) improvements to access roads and designated parking areas;

4) improved boat docking and handling facilities;

5) development of interpretive facilities and appropriate protective measures in the Minowukaw Beach sand dune and Fisher Creek areas.

6) in addition, the future of the IBP natural area and the significant natural heritage features on the north and east sides of Candle Lake will have to be addressed. The Park Land Reserve to the north of the Minowukaw Beach unit of the Park will be evaluated with the view to future inclusion in the Provincial Park.

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